

Light-driven microrobotics

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Abstract: The talk will focus on light-driven microrobot team and swarm. An intelligent and bio-inspired light-driven micro-walker based on light-sensitive deformation of liquid crystal elastomers (LCEs) will be introduced. LCEs, photoresponsive polymers, have been demonstrated to be valid candidates for an “intrinsic” and intelligent material cleverness. The proposed intelligent light-driven walker, equipped with tunable lasing and flat focusing devices, fundamentally different from other conventional actuating methods that rely on external forces, has self-guiding behavior to decide where/when to carry out a specific task. The proposed research is focused on studying and discovering light-matter interaction phenomena in the microscopic scale.